

Listing of Claims

1. (CURRENTLY AMENDED) A power amplifier comprising:

a single circuit board having a plurality of subcircuits, including a high power gain subcircuit, thereon;

the circuit board comprising multiple conductive layers including a first signal distribution layer, a second ground plane layer, a third signal distribution layer, and a fourth conductive layer separated from the third signal distribution layer by a dielectric layer and defining a fourth ground plane layer, the layers embedded in the circuit board, the second ground plane layer disposed between the first and third signal distribution layers, and the fourth ground plane layer being substantially metallized;

the subcircuits including components mounted on the first signal distribution layer and controlled impedance circuits used for operation of such components, the second ground plane layer completing the controlled impedance circuits;

a chassis body and a lid structure for coupling with the chassis body to contain the circuit board, the chassis body having a main surface formed thereon for mounting the circuit board;

the substantially metallized fourth ground plane layer of the circuit board coupling directly with the main surface of the chassis body to provide a ground reference to the circuit board, the second ground plane layer being directly coupled with the fourth ground plane layer for providing proper grounding and shielding of the subcircuits;

a plurality of walls integrally formed with the lid structure and extending from the lid structure and disposed for surrounding the subcircuits to electrically isolate the subcircuits from one another on the circuit board.

2. (CANCELED)

3.(PREVIOUSLY PRESENTED) The power amplifier of claim 1 wherein said walls form cavities for containing said subcircuits.

4.(ORIGINAL) The power amplifier of claim 1 wherein the circuit board includes a ground path formed along a surface of the board, the wall coupling with a portion of the ground path for grounding the wall and the lid structure.

5.(PREVIOUSLY PRESENTED) The power amplifier of claim 4 wherein said ground path is shaped to surround a portion of a subcircuit, the wall having a shape generally corresponding to the shape of the ground path.

6. (PREVIOUSLY PRESENTED) The power amplifier of claim 1 wherein the multiple conductive layers are separated by dielectric layers, the first conductive layer being coupled to components of the subcircuits.

7. (PREVIOUSLY PRESENTED) The power amplifier of claim 1 wherein the third signal distribution layer is separated from the second ground plane layer by a dielectric layer and is configured for distributing signals across the circuit board and between subcircuit components.

8-11. (CANCELED)

12.(ORIGINAL) The power amplifier of claim 1 wherein said lid structure includes component clearance areas adapted to provide clearance for components of the subcircuits.

13.(ORIGINAL) The power amplifier of claim 1 wherein said chassis body includes a least one coupling channel formed therein to allow coupling connections between subcircuits.

14.(ORIGINAL) The power amplifier of claim 1 wherein the wall includes a pathway formed therein for connecting subcircuits together.

15.(ORIGINAL) The power amplifier of claim 1 further comprising a gasket coupled to said wall for further isolating the subcircuit.

16.(ORIGINAL) The power amplifier of claim 1 wherein the chassis body includes at least one channel adapted to contain at least one subcircuit extending downwardly from the circuit board.

17-34. (CANCELED)

35. (CURRENTLY AMENDED) A method of isolating subcircuits of a power amplifier comprising:

positioning a plurality of subcircuits, including a high power gain subcircuit, on a single circuit board;

the subcircuits including components mounted on the first signal distribution layer and controlled impedance circuits used for operation of such components;

distributing signals to components of the subcircuits through a first signal distribution layer and between the subcircuits with a third signal distribution layer wherein the signal distribution layers are embedded in the circuit board;

providing a second ground plane layer between the first and third signal distribution layers, the second ground plane layer completing the controlled impedance circuits; and

providing a fourth ground plane layer separated from the third signal distribution layer, the fourth ground plane layer being substantially metallized;

mounting the circuit board in a chassis body having a main surface;

coupling the substantially metallized fourth ground plane layer of the circuit board directly with the main surface of the chassis body to provide a ground reference to the circuit board, and directly coupling the second ground plane layer with the fourth plane ground layer for providing proper grounding and shielding of the subcircuits;

positioning a lid structure having a plurality of walls integrally formed with the lid structure and extending therefrom over the circuit board such that the walls surround the high power gain subcircuit and electrically isolate the subcircuits from another.

36.(ORIGINAL) The method of claim 35 further comprising forming an isolation ground path along a surface of the circuit board and coupling the walls with at least a portion of the isolation ground path for grounding the wall and the lid structure.

37.(PREVIOUSLY PRESENTED) The method of claim 35 further comprising shaping the isolation ground path to generally follow the shape of the walls surrounding the subcircuits.

38.(PREVIOUSLY PRESENTED) The method of claim 35 further comprising coupling a gasket to walls surrounding the subcircuits for further isolating the subcircuits.

39.(ORIGINAL) The method of claim 35 further comprising positioning a power supply subcircuit and a high power gain subcircuit on the circuit board and positioning them generally at opposite ends of the circuit board.

40.(ORIGINAL) The method of claim 35 further comprising plating a perimeter of the single printed circuit board with conductive material.

41-46. (CANCELED)